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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/528,228	03/18/2005	Yukio Yamaji	P70312US0	6232

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EXAMINER	
MAKI, STEVEN D	

ART UNIT	PAPER NUMBER
1733	

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10/04/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/528,228	YAMAJI ET AL.	
	Examiner	Art Unit	
	Steven D. Maki	1733	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-15,17 and 18* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-15,17 and 18* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *091505*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

1) The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2) Claims 1-12 and 17 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

As to apparatus claim 1, the effect of "which is provided on the mixer" and "which is used for fractionating a part of the gypsum slurry" on the scope of the claim is uncertain. It is unclear for example if the mixer is one of the claimed elements of the apparatus. It is also noted that there is no antecedent basis for "the mixer" on line 4 of claim 1.

In claim 5, there is no antecedent basis for "said discharge port".

3) The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4) The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5) **Claims 1, 2, 7, 9 and 10 are rejected under 35 U.S.C. 102(b) as being anticipated by Ainsley et al (US 5,714,032).**

See figure 1. The slurry fractionation port is defined at the split between pumps 26, 26' ("valve means").

6) **Claims 1, 4-7, 9-10, 13-14 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Japan 808 (JP 08-112808) in view of Miura et al (US 6,193,408), Bold (WO 93/0389) and Sucech et al (US 5,683,635).**

Japan 808 discloses a method of manufacturing a gypsum board comprising feeding a lower paper sheet 110, depositing a gypsum slurry comprising calcined gypsum and water onto the lower paper sheet using conduit 140, depositing a core slurry onto the coated lower paper sheet from a conduit 190 ("chute section"), depositing a gypsum slurry onto an upper sheet 160 from conduit 150 and applying the coated upper sheet to the deposited core slurry. See figure 2 and machine translation. The gypsum slurry in each conduit is supplied from a mixer 120. Japan 808 does not recite connecting the "chute section" 190 to the mixer 120 using a "hollow connector section".

As to claims 1, 9 and 10, it would have been obvious to one of ordinary skill in the art to connect Japan 808's "chute section" 190 to the mixer 120 using a "hollow connector section" since Miura et al, also directed to the gypsum board art, suggests connecting a "chute section" 41 to a mixer 10 for mixing water and calcined gypsum using a "hollow connector section" 45 to facilitate feeding the gypsum slurry mixed by the mixer to the "chute section 41". Furthermore, it would have been obvious to one of

ordinary skill in the art to feed gypsum slurry to the sheets from the chute section 190 disclosed by Japan 808 or the "hollow connector section 45" suggested by Miura et al instead of directly from the mixer 120 since (1) Bold, also directed to the gypsum board art, suggests mixing calcined gypsum and water in a mixer 10a, feeding core slurry material through a "flow line" to another mixer 10b for adding additives and feeding gypsum slurry for upper and lower layers of the board from the **single "flow line"** for the gypsum core slurry so that advantageously the core material may be provided with a different composition ("additives") than the upper and lower layers and (2) Sucech et al, also directed to the gypsum board art, suggests feeding gypsum slurry to upper and lower sheets through flow lines 46 and 48 from a **single "flow line"** which communicates with the mixer at one outlet 44. The expected and predicted result of this combination from the teachings of Bold is providing Japan 808's gypsum board manufacturing method and apparatus with the additional beneficial capability of forming a gypsum core having a composition different from the upper and lower layers. Hence, Bold and Sucech et al recommend splitting / fractionating gypsum slurry from a location located outside the mixer.

As to claims 4-6 and 14, it would have been obvious to one of ordinary skill in the art to provide Japan 808's gypsum board making apparatus with the claimed foam inlet and use it to introduce foam into the core slurry since Sucech et al suggests providing an inlet for foam to the flow line for a core slurry in order to provide the capability to reduce the weight of the gypsum board.

As to claim 7, the particular location for the fractionation port on the chute section / hollow connector section would have been obvious and could have been determined without undue experimentation in view of (1) the general illustration by Japan 808 of conduit 160 extending from the upper side of the mixer at a location in the vicinity of chute section 190 and (2) the suggestion from Bold and Sucech et al to split (fractionate) one flow line into at least two separate flow lines for gypsum slurries.

As to claims 13 and 17, Japan 808 teaches the use of roll coaters 100 and 110.

7) **Claims 2-3, 8 and 11-12, are rejected under 35 U.S.C. 103(a) as being unpatentable over Japan 808 (JP 08-112808) in view of Miura et al (US 6,193,408), Bold (WO 93/0389) and Sucech et al (US 5,683,635) as applied above and further in view of Hauber et al (US 6,878,321).**

As to claims 2, 3 and 8, it would have been obvious to provide "valve means" for opening and closing the fractionation port and to use such valve means to obtain desired flow rate since Hauber et al suggests providing a controller 46 for regulating flow of a core slurry. As to claim 3, it would have been obvious to provide a casing as claimed since (1) Hauber et al teaches locating the controller 46 in the vicinity of the mixer (figure 1) and (2) it is taken as well known / conventional per se to enclose a valve within a casing. As to claim 8, it would have been obvious to one of ordinary skill in the art to provide the claimed driving device and drive control means since it is taken as well known / conventional in the art to operate a valve using driving device and drive control means. The suggestion to use a "valve" to control flow of gypsum slurry comes from Hauber et al instead of the official notice.

8) **Claims 15 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Japan 808 (JP 08-112808) in view of Miura et al (US 6,193,408), Bold (WO 93/0389) and Sucech et al (US 5,683,635) as applied above and further in view of Seecharan et al (US 6,190,476).**

As to claims 15 and 18, it would have been obvious to one of ordinary skill in the art to provide densification mixers 55, 54 as disclosed by Seecharan et al and use them to perform the claimed agitating step for the slurries delivered to the paper sheets since Seecharan et al suggests using such high densification mixers to prevent the coating layers for the paper sheets from having too low a density which interferes with the bond of the gypsum to the paper.

Remarks

9) The remaining references are of interest.

10) No claim is allowed.

11) Any inquiry concerning this communication or earlier communications from the examiner should be directed to Steven D. Maki whose telephone number is (571) 272-1221. The examiner can normally be reached on Mon. - Fri. 8:30 AM - 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Crispino can be reached on (571) 272-1226. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Steven D. Maki
October 1, 2007

10-1-07

STEVEN D. MAKI
PRIMARY EXAMINER